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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/447,378	11/23/1999	RYUJI NISHIKAWA	005586-20019	3746

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EXAMINER

QI, ZHI QIANG

ART UNIT PAPER NUMBER

2871

DATE MAILED: 11/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/447,378

Applicant(s)

NISHIKAWA ET AL.

Examiner

Mike Qi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 27 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 6-9, 12-14, 18, 21-23 and 26-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10, 15-17, 19 and 24 is/are rejected.
- 7) ☒ Claim(s) 11, 20 and 25 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.

2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-448)3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,55) ☐ Notice of Informal Patent Application (PTO-152)6) ☐ Other

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11 and 20 are recite the limitation "the orientation diver has a width different from that of the light-shielding film" in claims 1 and 15 respectively. There is insufficient antecedent basis for this limitation in the claims. Because the independent claims 1 and 15 do not describe the orientation diver. The independent claims 1 and 15 describe the orientation divider and that is an orientation control window, and the light-shielding film is the drain signal line. For examination purpose, it is interpreted as the orientation control window has a width difference from that of the drain signal line.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application

published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-5, 10, 15-17 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Applicant admitted prior art.

Claims 1 and 15, Applicant admitted prior art discloses (page 1, line 10 – page 5, line 27; Figs. 1-3) a structure of a conventional liquid crystal display device comprising:

- a plurality of pixel electrodes (19) and an opposing electrode (34) disposed to oppose the plurality of pixel electrodes (19) with the liquid crystal (21) therebetween;
- an orientation divider (orientation control window 36) for dividing an orientation of the liquid crystal in a single pixel into a plurality of directions (the applied voltage control the liquid crystal molecules to incline in a plurality of orientation directions);
- a light-shielding film (32 in Fig. 2 or the drain line 50 made of metal, being a conductive material, functions as a light-shielding film in Fig. 3) is disposed to overlap with the boundaries of the orientation directions of the liquid crystal which are formed by the orientation divider (orientation control window 36).

Claims 2 and 16, Applicant admitted prior art discloses (page 1, line 10 - page 5, line 27; Figs. 1-3) a liquid crystal display device comprising:

- the liquid crystal (21) is sealed between the first substrate (10) and the second substrate (30) to oppose each other.

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- the first substrate (10) has switching elements (TFTs 13) connected to the gate signal lines (51), the drain signal lines (50) and the pixel electrodes (19);
- the opposing electrode (34) is formed on the second substrate (30) to oppose the liquid crystal.

Claims 3-4, Applicant admitted prior art discloses (page 4, lines 3-25; page 2, lines 7-13; Figs.1-3) that a liquid crystal display device comprises the orientation divider (orientation control window 36) divides the orientation direction of the liquid crystal by the electric flux line produced in a slanting direction at the end of the pixel electrode (19) and the end of orientation control window (36), and that is inclined with respect to the normal line of the pixel electrode (19) and/or the opposing electrode (34); and orientation control window (36) is formed by removing ITO as an opposing electrode material in the opposing electrode (34) (forming an opening) at position to overlap the pixel electrodes (19).

Claims 5 and 17, Applicant admitted prior art discloses (page 5, lines 17-22; Figs.1-3) that the drain signal lines (50) are made of a light-shielding material such as metal, so that the drain signal lines (50) also functions as a light-shielding film.

Claims 10 and 19, Applicant admitted prior art discloses (page 3, lines 12-19; Figs.1-3) that the nematic liquid crystal (21) has a negative anisotropy of dielectric constant, and a vertical orientation film (20) is formed to cover the pixel electrodes (19).

5. Claim 24 is rejected under 35 U.S.C. 102(e) as being anticipated by US

6 097 466 (Koma)

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43; Figs. 1-2) a liquid crystal display device comprising:

- liquid crystal layer (40) is sealed between the first substrate (10) and the opposed substrate (30);
- the first substrate (10) has switching elements (TFTs) connected to gate signal lines (12L) and drain signal lines (18L), and the pixel electrodes (26) which are connected to the TFTs through contact hole and made of Al (metal) conductive material, and a vertical alignment film (28) for orienting the liquid crystal;
- the second substrate (30) has an opposing common electrode (32) which has alignment control window (34) at position overlapping with the pixel electrodes (26) to control the orientation of the liquid crystal and a vertical alignment film (28) for orienting the liquid crystal;
- the drain signal lines (18L) are disposed on the first substrate (10) at positions that overlap with the alignment control window (34) (see Fig.1).

Allowable Subject Matter

6. Claims 11 and 20 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

7. Claims 11, 20 and 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither discloses nor teaches a liquid crystal display device comprising various elements, more specifically, as the following:

The orientation control window has a width different from that of the drain signal line overlapping with the orientation control window [claims 11, 20 and 25].

The closest references Applicant admitted prior art, US 6,097,466 (Koma) and US 6,157,428 (Koma) disclose a structure of a liquid crystal using alignment control window to divide the orientation direction in a pixel electrode region so as to enlarge the viewing angle display, but the arrangement for the alignment control window having different width from the drain signal line overlapping with the alignment control window does not disclose in the prior art of record.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (703) 308-6213. The examiner can normally be reached on 349.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes, can be reached on (703) 308-4842. The fax phone numbers

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for the organization where this application or proceeding is assigned are (703) 308-7721 for regular communications and (703) 308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Mike Qi
September 25, 2002

TOANTON
PRIMARY EXAMINER